Network Characteristics of a Social Support Organization for Gay Men in Southern California

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Abstract

Gay men are at risk for a range of negative health and mental health issues, including HIV and depression. The extant literature demonstrates the integral role that social support can play in improving health and well-being among gay men, yet little empirical evidence exists to document the supportive social networks of gay men. The present study sought to understand the network structure of a social support organization for gay men in Southern California. Cross-sectional data collection was conducted online using name generator- and roster-based surveys. Participants were asked their age, organizational tenure, level of organizational involvement, and whether or not they had attended that year's organizational retreat. Thirty-nine men participated in the study (response rate: 87%). The overall density of the social network was 26.57%; the social network had a high degree of centralization (51.86%) and an average path length of three, indicating a cohesive and well-integrated social network. Social network structure was correlated with age ($r = 0.109$, $p = 0.006$), organizational tenure ($r = 0.188$, $p = 0.000$), organizational involvement ($r = 0.130$, $p = 0.002$), and retreat attendance ($r = 0.216$, $p = 0.000$). Results demonstrate the connectedness of members of the social support organization examined in the present study and the utility of empirically examining social support network structures of gay men. Strengths-based intervention strategies that capitalize on social support network structures may be helpful in buffering negative health outcomes for gay men.

Introduction

Gay men remain a vulnerable population at risk for a number of negative health and mental health outcomes. Men who have sex with men are the largest group affected by HIV in the United States (CDC, 2007) and are at considerable risk for other sexually transmitted infections, such as syphilis, chlamydia and gonorrhea (CDC, 2000). Depression rates among gay men are significantly higher than those among male adults in the general U.S. population (Mills et al., 2004) and have been associated with histories of violence, victimization and stigmatization (Garnets & Kimmel, 2003). In a recent population-based study of urban men who have sex with men, both distress and depression were associated with lack of a domestic partner; not identifying as gay, queer, or homosexual; experiencing multiple episodes of antigay violence in the previous 5 years; and very high levels of community alienation (Mills et al., 2004). These statistics indicate an urgent need for the development of intervention strategies to increase health and well-being among gay men.

Social isolation is a major problem for gay men in general but especially for HIV-positive gay men, where stigma related to HIV may prevent men from forming close social relationships for fear of having to disclose their HIV serostatus (Herek & Capitanio, 1999). A meta-analysis by Ciesla and Roberts (2001) on depression among HIV-positive men determined that the frequency of a major depressive disorder was two times higher in HIV-positive individuals than HIV-negative persons. One factor that has been shown to lessen the negative mental health burden associated with HIV diagnosis is social support. Social support among HIV-positive men

has been associated with decreased depression (Hays, Turner, & Coates, 1992) and improved immune functioning (Ullrich, Lutgendorf, & Stapleton, 2003). A recent study of social support networks among twenty five gay men with AIDS demonstrated that psychological well-being was correlated with the degree to which the person with AIDS received emotional and informational support, had close relationships, and reciprocated support to friends in his network (Hays, Chancey, & Tobey, 2006).

The extant literature demonstrates the integral role that social support can play in improving mental and physical health for gay men. However, some research indicates that there are limited opportunities for gay men to connect with other gay men in order to attain social support. Gay male social contexts, including bars, dance clubs, and internet meeting spaces often hold risks for engaging in harmful health behaviors. Reback, Larkins and Shoptaw (2004) note the ways in which the highly addictive drug crystal methamphetamine has been integrated into gay male social contexts and is often used to relax inhibitions about gay male sexual behavior. The combination of crystal methamphetamine use and these social contexts allows gay men access and opportunity to engage in high-risk sexual activity with multiple partners during compressed periods of time, which contributes to the risk of spreading HIV. However, these social venues are some of the few organized gay male contexts where men can meet and experience a sense of community.

Urban centers may present greater opportunities for engagement in positive gay-male social contexts than rural environments. The present study sought to identify social network properties of a large social support organization for gay men in Southern California. In the interest of confidentiality, the organization will not be named explicitly. However, readers may be interested to know that the organization's primary goal is music making. Since men join together to make music, there is a common goal around which gatherings are structured. Weekly rehearsals, for example, involve one and a half hours of music rehearsal, a half hour break for snacks and socializing, and another hour of rehearsal. This type of structured meeting time allows members of the organization a context in which they can access social support without the pressures of negative health promoting forces, such as alcohol or drugs. Through a greater understanding of the social structure of this support organization, the present study seeks to inform pro-social network based health intervention programs for gay men.

Methods

Study Design and Sample

This cross-sectional study aimed to map the social network of one section of a social support organization in Los Angeles, California. Since members may take a leave of absence during any given concert cycle and are thus removed from email communication for that cycle, only men enrolled in the spring, 2009 concert were recruited for the present study. Active members were sent an e-mail describing the study and a link to an online questionnaire. When potential participants clicked on the link, they were guided to Qualtrics (Qualtrics Inc., 2009), a popular online survey website, where members were given additional information about study's purpose. Men who chose to participate could then continue to the actual online survey. Those who decided not to participate were thanked and guided out of the Qualtrics program. Thirty-nine of the forty-five active members chose to participate in the study for a response rate of 87%. However, all 45 active members were kept in the dataset, since those who declined participation in the study could still be nominated by other members. Members were not compensated for the

participation; the study was approved by the Institutional Review Board at the University of Southern California.

Measurement

Both nomination and roster data collection techniques were used. Participants were asked to nominate seven other organization members that they knew well. In addition, roster data was gathered on members who participants knew well. Participants were also asked five additional questions related to demographics and organization involvement. These items included age, length of time in organization, level of organizational involvement, and whether or not the participant had attended that year's organizational retreat.

Age was determined through a single item asking participants to state their age in years. Age was then recoded into a categorical variable with four groups: (1) under 35 years old; (2) 35 to 44 years old; (3) 45 to 54 years old; and (4) 55 years old and over. Length of participation in the organization was assessed with a single item asking participants how many years they had been a member. Those participants who had been in the organization less than 1 year were coded as having been in the organization 1 year (since few members drop-out in their first year). Length of time in the organization was then recoded into a categorical variable with three categories: (1) Under 5 years; (2) 5 to 9 years; (3) and 10 years or more. Level of organizational participation was assessed through a single item asking participants to rate their involvement on a five-point scale from "minimally involved" (1) to "maximally involved" (5). Finally, retreat attendance was a dichotomous variable representing whether or not the participant had attended the organization's annual retreat.

Data Analysis

Once data collection ended, data was downloaded from the Qualtrics interface into the Statistical Package for the Social Sciences (SPSS Inc., 2001). Data was cleaned and recoded in this program before being exported to a spreadsheet where nomination and affiliation data matrices were constructed. Data was then imported into UCINet (Borgatti, Everett, Freeman, 1999) for analysis. Analyses were conducted in three stages. First, descriptive statistics on participant characteristics and individual networks were computed. Finally, the quadratic assignment procedure (QAP) was utilized to determine associations between social and conversational network matrices and affiliation matrices based on attribute. All metrics were calculated for both unsymmetrized and symmetrized networks; however, due to high density of unsymmetrized networks and the author's interest in reciprocal ties between network members, only symmetrized network data will be presented below.

Results

Descriptive Statistics

Descriptive statistics are listed in Table 1. Participants in the study ranged from 27 years of age to 76 years of age, with a mean of 44.8 years. Mean length of Organization tenure was 9.23 years (range: 1 – 30). The majority of participants (82.1%) had attended the annual organization retreat. Self-reported involvement in the organization was skewed toward the high end of the five-point scale. The mean level of involvement was 3.46, with the majority of participants reporting that they were moderately to maximally involved (82%) and only a small percentage of participants reporting that they were minimally involved (5.1%).

Table 1: Characteristic of Study Participants (n = 39)

Characteristic	n	%
Mean age (range)	44.8	(27 – 76)
Age		
Under 35 years	5	12.8%
35 to 44 years	16	35.6%
45 to 54 years	12	26.7%
55 and over	6	13.3%
Mean length of time in Organization (range)	9.23	(1 – 30)
Length of time in Organization		
Under 5 years	12	30.8%
5 to 10 years	15	38.5%
10 or more	12	30.8%
Retreat Attendance		
No	7	17.9%
Yes	32	82.1%
Mean level of Organization involvement (range)	3.46	(1 – 5)
Level of Organization involvement		
Not involved	2	5.1%
Somewhat involved	5	12.8%
Moderately involved	15	38.5%
Highly involved	7	17.9%
Maximally involved	10	25.6%

Symmetrized social and conversation networks had a size of 39, since those who did not respond to the survey were excluded from the networks (Figure 1). The overall density of the social network (26.57%) was more than twice as big as the overall density of the conversation network (12.73%). Degree centralization for both networks was high; the social network had a degree centralization of 51.86% and the conversation network had a degree centralization of 49.74%. The top three most central nodes by degree, closeness and betweenness calculations are listed in Table 2. The diameter, or the length of the longest path in the network, was 3 for the social network and 4 for the conversation network. Average path length, the average of the distances between all nodes in the network, was shorter in the social network (1.702) than in the conversation network (2.001). See Table 3 for a complete list of network measures.

Figure 1: Interpersonal Network of a Social Support Organization for Gay Men in Southern California

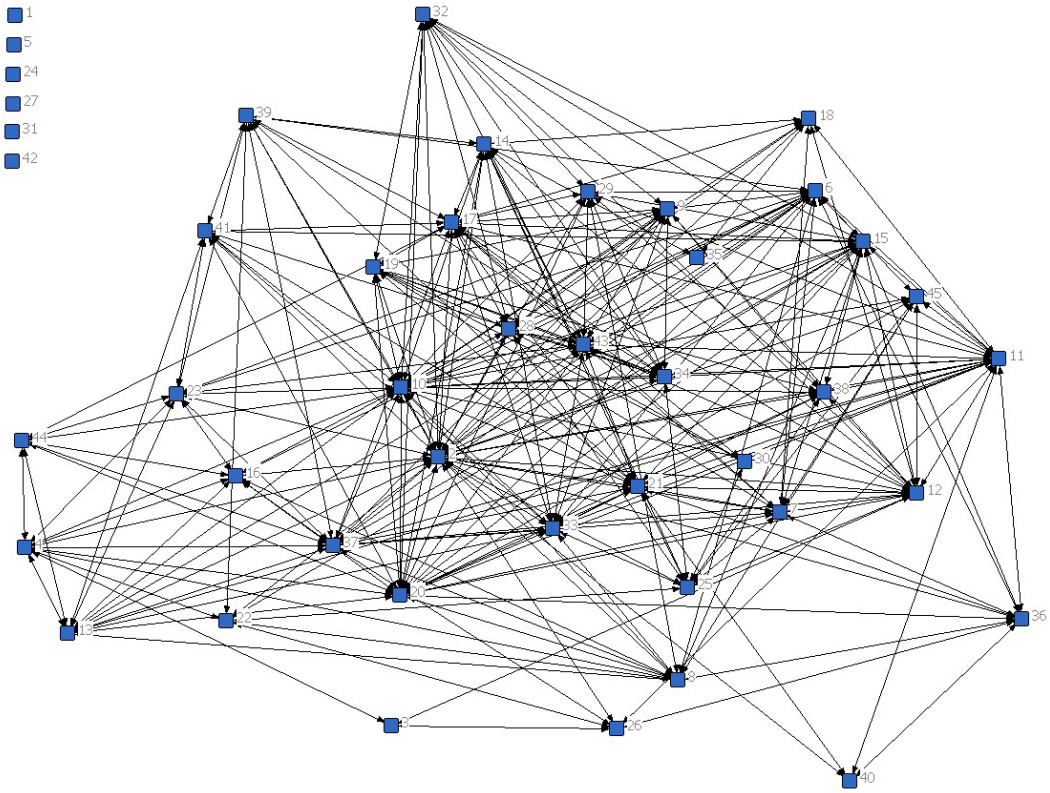

Table 2: Centrality Measures for Social and Conversation Networks

Centrality Measure	Social (roster)
Degree (mean)	26.57 (17.25)
1st	2 (77.27)
2nd	10 (63.64)
3rd	20 (52.27)
Closeness (mean)	13.16 (0.36)
1st	2 (14.10)
2nd	10 (13.84)
3rd	20 (13.62)
Betweenness (mean)	20.33 (26.68)
1st	2 (106.43)
2nd	10 (51.05)
3rd	17 (33.01)

Table 3: Network Metrics for Social Support Organization Social Network

Metric	Social (roster)
Size	39
Density	0.2657
Transitivity	5.04%
No. of triangles with 3 legs	4,290
Diameter	3
Average path length	1.702

Quadratic Assignment Procedure (QAP) Analyses

QAP analysis was used to determine associations between networks and affiliation matrices. Although not a primary outcome for the present study, a correlation of 0.368 ($p = 0.000$) was found between the social network constructed by nomination data and the same network constructed by roster data. All attributes were statistically significantly correlated with the social network, although most of the Pearson correlation coefficients were low. Social network structure was correlated with age ($r = 0.109$, $p = 0.006$), organizational tenure ($r = 0.188$, $p = 0.000$), organizational involvement ($r = 0.130$, $p = 0.002$), and retreat attendance ($r = 0.216$, $p = 0.000$). All QAP correlations are listed in Table 4.

Table 4: QAP Analysis of Social Support Organization Social Network

	Social (roster)	
Attribute	Corr.	p-value
Age	0.109	0.006
Time in Organization	0.188	0.000
Retreat attendance	0.216	0.000
Organization involvement	0.130	0.002

Discussion

The present analysis suggests that the social support organization studied here is very cohesive. Unsymmetrized data estimated the social network density at 42.8% (26.6% once the data was symmetrized). However, the symmetrized density estimates continue to indicate a well-connected social network structure. The social network was also highly centralized with approximately 50% degree centralization. Centralization refers to the extent to which network links are focused on one of a few nodes. Nodes two and ten were consistently in the top three most central positions when evaluating degree centrality, closeness centrality and betweenness centrality, indicating that these two actors were most connected, had lowest average distances from all other nodes in the network, and most often lay on the shortest path connecting all members. Perhaps most interesting was the data obtained through QAP analysis. In addition to an association between who members in the organization knew, a number of other associations between demographic attributes and network structures emerged. When taken together with visual inspection of the network diagrams, this information can be especially useful to

understanding network dynamics. Age was associated both with social and conversation network. In the social network, age groups seem to cluster together and the youngest members were on the periphery of the network. This information indicates that the organization could improve by working to foster more intergenerational friendships between members. This process, coupled with greater integration of younger members into the social network may inspire greater mixing between age groups.

Length of time in the organization and self-reported level of involvement were also associated with who members knew. When examining these network diagrams, slightly different patterns emerged for both organizational tenure and level of involvement. Organizational tenure seems to have a clumping effect in both the social network and conversation network. This may be indicative of a cohort effect. Since a large effort is made to welcome new members into the organization and facilitate meetings between those members, those who entered the organization around the same time are likely to be friends and talk to others who joined with them. As is the case with many volunteer organizations, new members are more likely to drop out of the organization within a few years, which may deter those who have been in the organization longer from investing significant time or energy in getting to know these new members. Instead men who have been in the organization longer may foster more close friendships with men who have also been in the organization past this "new member honeymoon." With some exception, those who reported minimal involvement in the organization lie on the periphery of the network and those moderately to maximally involved in the organization hold central positions. While the direction of this relationship is not clear since this is a cross-sectional study, it makes sense that those who consider themselves most involved would hold central positions in the social network, since they spend significant time working on organization-related projects and interacting with other men who are similarly involved.

The information gathered here has implications for network based health promotion for gay men. To date, the majority of network studies focused on gay men have examined substance use and HIV risk behavior. It is less common for studies to focus on the pro-social connections that gay men form with one another. This focus is important because it enables network study findings to inform strengths-based intervention programs. The results of this study seem to confirm the assertion that the organization described here is a social context from which its members can gain considerable social support, and is perhaps emblematic of a variety of social support organizations that foster positive communication and health promoting behaviors among gay men. Many of the members of the organization described here are HIV-positive and some struggle with considerable psychosocial stressors, such as depression, unemployment, substance abuse and sexual compulsivity. As demonstrated in the extant literature, these issues can be greatly buffered by the presence of a supportive social network. Future studies will want to examine more explicitly the role that gay men's organizations and other social organizations, such as gay sports organizations, can play in increasing social support and improving various health outcomes for gay men. Areas for future inquiry include how and why gay men decide to join a social support organization and how gay social support organizations buffer psychosocial stressors.

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